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EPA ID NUMBER

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EVALUTION OF ANALYTICAL CHEMICAL DATA FROM  
OTILIO AND SONS LANDFILL  
NEWARK, NEW JERSEY

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8312-02A  
CONTRACT NO. 68-01-6699


FOR THE

ENVIRONMENTAL SERVICES DIVISION  
U.S. ENVIRONMENTAL PROTECTION AGENCY

MARCH 2, 1984

NUS CORPORATION  
SUPERFUND DIVISION

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## **1.0 EXECUTIVE SUMMARY**

On December 15, 1983 FIT collected ten (10) soil samples, in the vicinity of Ottilio & Sons Landfill, Newark, NJ in order to determine the presence or absence of 2,3,7,8-TCDD and 2,3,7,8-TCDF.

The major findings of this evaluation include:

1. Soil sampled at the Ottilio & Sons Landfill contained no detectable levels of TCDD.
2. Soil from the Ottilio & Sons Landfill contained concentrations of TCDF less than 1 ppb.
3. Heavy black leachate with an oily sheen, of unknown content is collecting in a drainage ditch on the northern border of the site. The oily leachate would predicate the need for further sampling and investigation of potential routes of contaminant migration off site.

## 2.0 OBJECTIVE

The purpose of this investigation was to determine the presence or absence of 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD) and 2,3,7,8 tetrachlorodibenzofuran (TCDF) at the Ottilio & Sons Landfill, Newark, New Jersey.

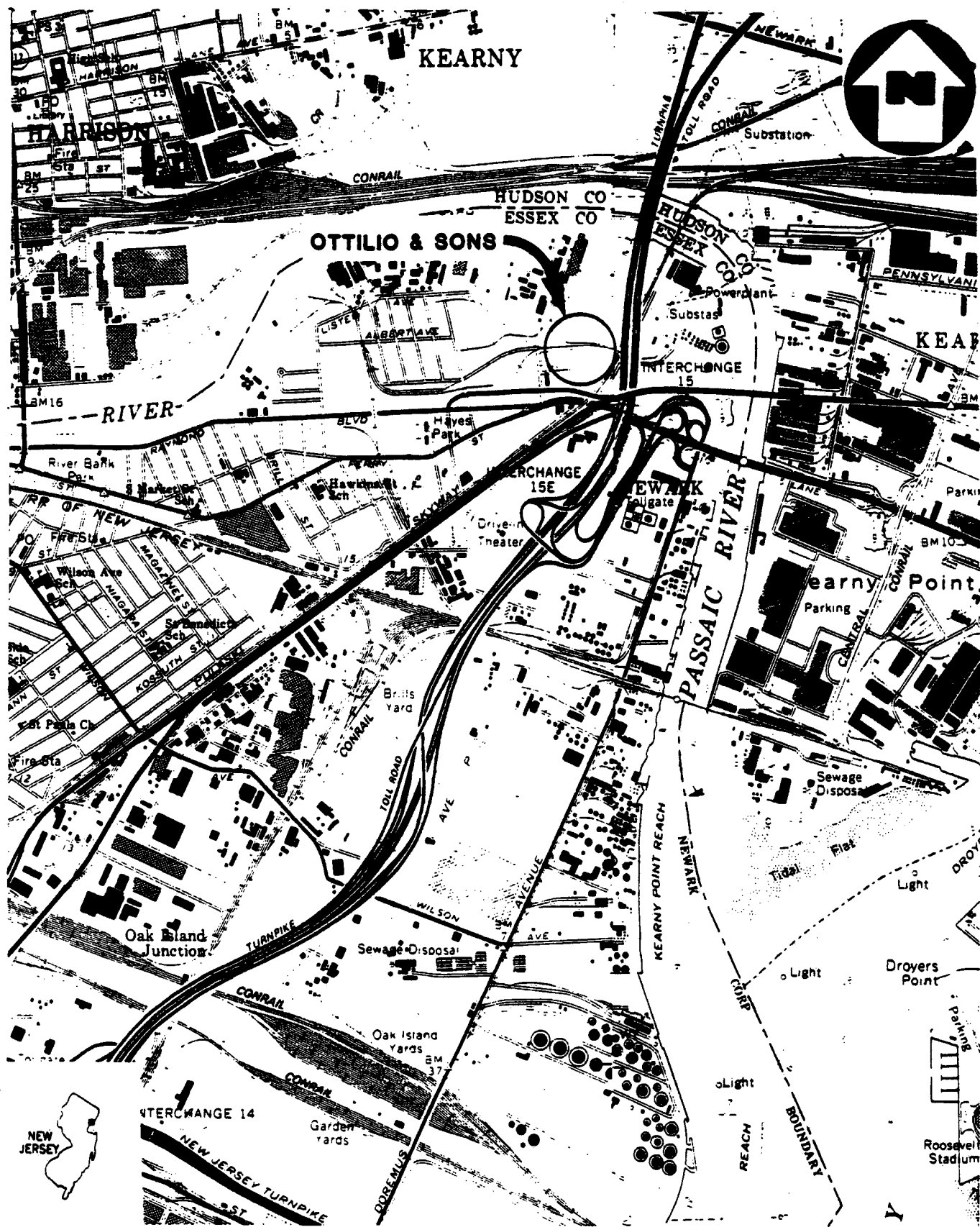
### **3.0 BACKGROUND**

Figure 1 provides a site location map of Ottilio and Sons Landfill site. The site covers approximately 6.4 acres and is located at 18-60 Blanchard Street in a commercial-industrial section of the city of Newark, Essex County, New Jersey. The Passaic River is located approximately 1500 feet north of the site. A mixture of earth and construction refuse covers sections of the site. An unknown number of 55-gallon drums are scattered throughout the site. There is a large, recently bulldozed area along the western boundary of the property. A small pond exists at the eastern edge of the site. Runoff from this pond, the site proper and adjacent properties collects into two drainage ditches which run parallel to railroad tracks bordering the north end of the site.

The site was operated as a landfill through the mid 1970's. In 1974 an unknown number of 55-gallon drums were dumped at the site. In June, 1974 the operators and owners of the property were cited for operating an illegal landfill. In June, 1975 the majority of the construction debris was removed and a shallow layer of soil applied to the site. At that time the site was registered with the New Jersey Department of Environmental Protection (NJDEP) as a solid waste landfill. The 55-gallon drums were apparently not removed and remain on the property. Currently the site is inactive and abandoned.

The site was investigated by Fred C. Hart, acting as the Field Investigations Team (FIT) to the U.S. EPA, in July, 1980 and July, 1981. Runoff in the drainage ditches and the pond was initially sampled. Low levels of pentachlorophenol and several pesticides were detected in the samples. The sampling conducted in 1981 included sediment and water samples from various points within the site. The samples were analyzed for priority pollutants. The results of this analysis indicated low levels of pesticides, base neutral extractables, PCB's, volatile organics and heavy metals. It was noted that drainage from the pond eventually empties into the Passaic River (Shkuda, 1982).

FIT was tasked to conduct soil sampling at the Ottilio & Sons Landfill and vicinity. This activity took place on December 15, 1983. This report, authorized under TDD No. 02-8312-02A, is an evaluation of the chemical data from the December, 1983 sampling carried out by FIT. A copy of TDD No. 02-8312-02A is provided on Appendix A.



(QUAD) ELIZABETH, N.J.

**SITE LOCATION MAP**  
**OTTILIO & SONS, NEWARK, N.J.**

SCALE 1" = 2000'

FIGURE 1



#### **4.0 METHODOLOGY**

On December 15, 1983 the FIT collected ten (10) soil samples at the Ottilio & Sons Landfill and vicinity. Figure 2 provides the sample location map. Table 1 provides sample numbers, descriptions and dates samples were taken. A total of fifteen (15) samples, including quality assurance (Q/A) samples, were sent to the laboratories for 2,3,7,8 TCDD and 2,3,7,8 TCDF analyses.

Soil samples were collected with stainless steel trowels. Each sample was a grab type taken at a depth of zero (0) to two (2) inches at each chosen location and placed in a stainless steel mixing container. The sample in the mixing container was stirred and mixed vigorously with a Waring commercial blender. The sample was removed from the container with a stainless steel spoon and placed in four (4) 8 oz. jars. One of these four (4) jars was shipped to the laboratory for analysis. The remaining three samples were retained for QA/QC purposes.

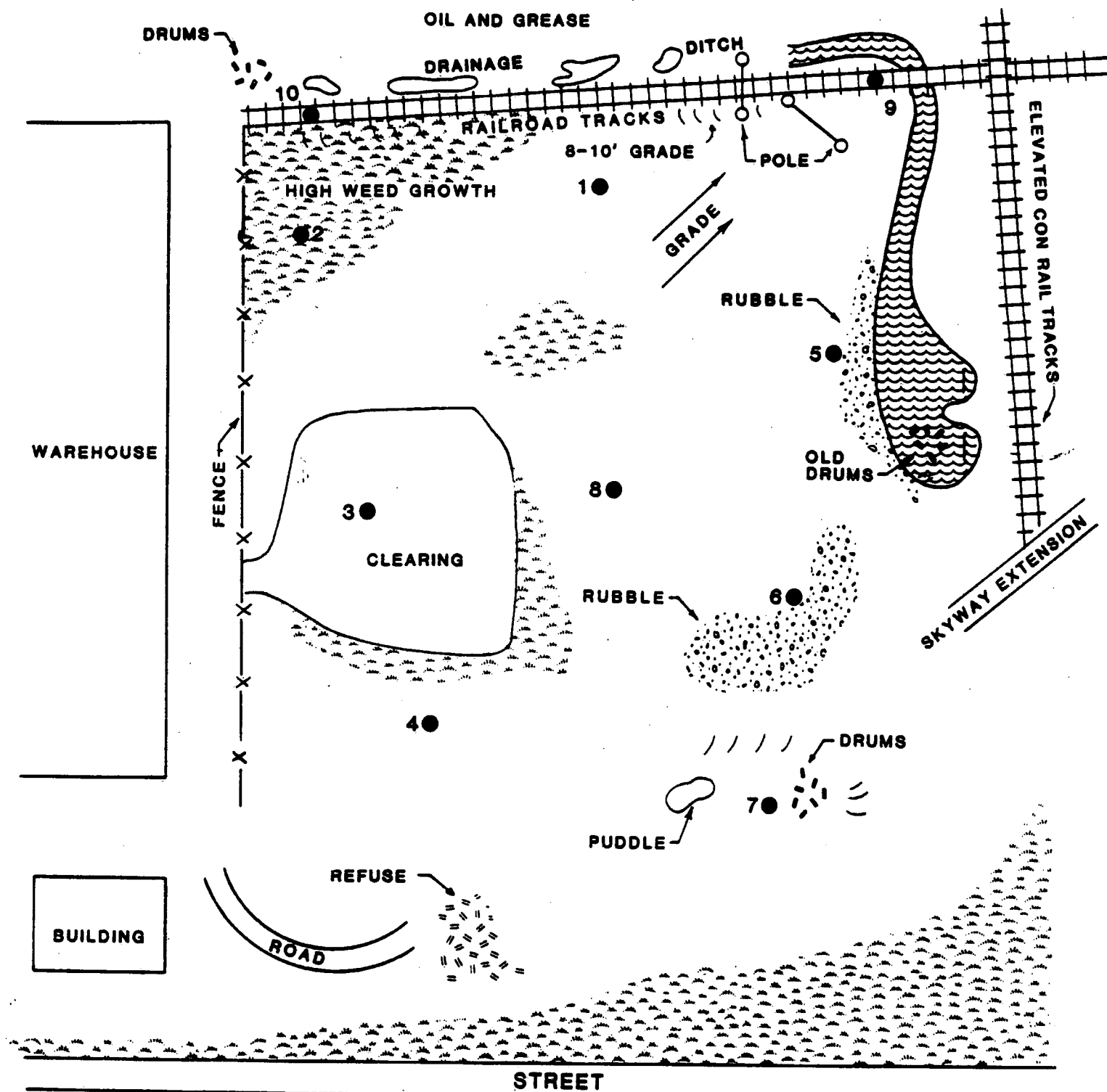
The analytical data from Ottilio and Sons Landfill and vicinity in Newark, New Jersey was evaluated from February 21, 1984 to February 28, 1984 by the following professional staff members:

Ed Ambrogio - Biologist

Thomas J. Cosentino - Toxicologist

Robert Scotto - Meteorologist





**SAMPLE LOCATION MAP**  
**OTILIO & SONS LANDFILL NEWARK, N.J.**

(NOT TO SCALE)

TABLE 1  
Sample Log  
Ottilio & Sons Landfill, Newark, NJ  
Case #SAS 901B

NUS Sample Number	Sample Description	Sample Type	SAS Sample Number	Date Sample Taken
1	Center of Northern edge of site	Surface Soil	901B-1	12/15/83
2	Northwestern corner of site	Surface Soil	901B-2	12/15/83
3	In center of clearing along western edge of site	Surface Soil	901B-3	12/15/83
4	Southwestern corner of site	Surface Soil	901B-4	12/15/83
5	Eastern edge of site, near drainage culverts	Surface Soil	901B-5	12/15/83
6	Southeast corner of site in mounds of soil and con- struction rubble	Surface Soil	901B-6	12/15/83
7	Southeast corner of site in depression which appears to have been drum disposal area	Surface Soil	901B-7	12/15/83
8	Near center of site, from highest part of the fill area	Surface Soil	901B-8	12/15/83
9	Northeastern corner of site at site entrance near railroad tracks	Surface Soil	901B-9	12/15/83
10	Northwest corner of site near oil seep	Surface Soil	901B-10	12/15/83
	Known Blank	Soil	901B-11	12/15/83
	Unknown Process Blank	Soil	901B-12	12/15/83
	Unknown Blender Blank	Soil	901B-13	12/15/83
	QA Reference Material "A"	Native Soil	901B-14	12/15/83

## **5.0 FINDINGS**

Table 2 provides analytical results for concentrations of TCDD and TCDF in the soil samples collected on December 15, 1983 from Ottilio & Sons Landfill and vicinity, Newark, New Jersey. All analyses were performed by California Analytical Laboratories, West Sacramento, California on January 9-13, 1984.

The results of the analyses show non-detectable amounts of TCDD and concentrations of less than 1 ppb of TCDF in all the samples taken. Values for TCDF ranged from 0.018 to 0.083 ppb.

During the site investigation of December 15, 1983 the FIT members noted significant amounts of heavy, black oil leaching from the landfill into the drainage ditches along the north end of the property. The FIT also noted oil and gasoline sheens on various puddles and ponds within the landfill. Sampling time constraints prevented any further investigation.

TABLE 2  
All Samples Including QA/QC  
Ottilio & Sons Landfill  
12/15/83  
Sample Descriptions

SAS Sample Number	Sample Location	Sample Type	TCDD Concentration (ppb)	Concentration Detect Limit	TCDF Concentration (ppb)	Concentration Detect Limit
901B-1	Center of Northern edge of site	Surface Soil	ND	.054	ND	.018
901B-10	Center of Northern edge of site	Surface Soil	ND	.011	ND	.017
901B-2	Northwestern corner of site	Surface Soil	ND	.039	ND	.008
901B-3	Western edge of site in center of clearing	Surface Soil	ND	.051	.065	---
901B-4	Southwestern corner of site	Surface Soil	ND	.110	.083	---
901B-5	Eastern edge of site, rear drainage culverts	Surface Soil	ND	.070	ND	.019
901B-6	Southeast corner of site in mounds of soil and construction rubble	Surface Soil	ND	.063	ND	.017
901B-7	Southeast corner of site in depression which appears to have been drum disposal area	Surface Soil	ND	.140	.018	---
901B-8	Near center of site, from highest fill area	Surface Soil	ND	.086	ND	.029
901B-9	Northeastern corner of site near railroad tracks at entrance to site	Surface Soil	ND	.058	ND	.021
901B-10	Northwest corner of site near oil seep	Surface Soil	ND	.110	.034	---
901B-11	Known Blank (Matrix Spike)	Soil	0.92	NA	ND	.010
901B-12	Unknown Process Blank	Soil	ND	.044	ND	.018
901B-13	Unknown Blender Blank	Soil	ND	.051	ND	.017
901B-14	QA Reference Material "A"	Native Soil	5.45	NA	2.10	---

D = Duplicate  
ND = Not Detected  
NA = Not Applicable

## **6.0 CONCLUSIONS**

The results of the chemical analysis indicate non-detected amounts of 2,3,7,8-TCDD in all soil samples. Four of the ten soil samples had detectable amounts of 2,3,7,8-TCDF, ranging from 0.018 to 0.083 ppb.

The results of the chemical analysis are based on sampling conducted on December 15, 1983. More detailed sampling is recommended at this site.

The heavy black oil leaching from the landfill into the northern drainage ditches is of unknown content. Past FIT sampling has detected the presence of PCB's and other priority pollutants. This soil may impact the water quality of the Passaic River. A past history of illegal dumping, the presence of numerous 55-gallon drums within the site, and the oil leachate would predicate the need for further sampling and investigation of potential routes of contaminant migration off site.

## 7.0 BIBLIOGRAPHY

Shkuda, G., Final Report V. Ottilio & Sons, Newark, NJ (1982). Fred C. Hart Associates, Inc. Newark, NJ.

**APPENDIX A**  
**TECHNICAL DIRECTIVE DOCUMENT**

<b>1. COST CENTER:</b> F-2 <b>ACCOUNT NO.:</b> 0400.01	<b>REM/FIT ZONE CONTRACT TECHNICAL DIRECTIVE DOCUMENT (TDD)</b>			<b>2. NO. :02-8312-02A</b>
<b>3. PRIORITY:</b>  <input checked="" type="checkbox"/> HIGH <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW	<b>4. ESTIMATE OF TECHNICAL HOURS:</b>  150 <b>4A. ESTIMATE OF SUBCONTRACT COST:</b>	<b>5. EPA SITE ID:</b> NJD 980529861 <b>5A. EPA SITE NAME:</b> <u>V. Ottillio &amp;</u> <u>Sons Landfill</u>	<b>6. COMPLETION DATE:</b>  3/2/84	<b>7. REFERENCE INFO.:</b>  <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> ATTACHED <input type="checkbox"/> PICK UP
<b>8. GENERAL TASK DESCRIPTION:</b> <u>V. OTTILIO &amp; SONS LANDFILL, Newark, NJ</u> <u>Evaluation of Analytical Chemical Data</u>				
<b>9. SPECIFIC ELEMENTS:</b>  1.) <u>Review background data</u> 2.) <u>Write Report</u> 3.) <u>Submit to EPA</u>				<b>10. INTERIM DEADLINES:</b>  <u>2/29/84</u> <u>2/29/84</u> <u>3/2/84</u>
<b>11. DESIRED REPORT FORM:</b> FORMAL REPORT <input checked="" type="checkbox"/> LETTER REPORT <input type="checkbox"/> FORMAL BRIEFING <input type="checkbox"/>  OTHER (SPECIFY): _____				
<b>12. COMMENTS:</b> <u>Overtime is Authorized</u>				
<b>13. AUTHORIZING RPO:</b> <u>Mark Haulenbeek</u> Mark Haulenbeek (SIGNATURE)			<b>14. DATE:</b> <u>2/17/84</u>	
<b>15. RECEIVED BY:</b> <input checked="" type="checkbox"/> ACCEPTED <input type="checkbox"/> ACCEPTED WITH EXCEPTIONS <input type="checkbox"/> REJECTED <u>Peter Franconeri</u> (CONTRACTOR RPM SIGNATURE)			<b>16. DATE:</b> <u>2/17/84</u>	

 Sheet 1  
Sheet 2

 White - FITL Copy  
Canary - DPO Copy

 Sheet 3  
Sheet 4

 Pink - Contracting Officer's Copy (Washington, D. C.)  
Goldenrod - Project Officer's Copy (Washington, D. C.)



## **6.0 CONCLUSIONS**

The results of the chemical analysis indicate non-detected amounts of 2,3,7,8-TCDD in all soil samples. Four of the ten soil samples had detectable amounts of 2,3,7,8-TCDF, ranging from 0.018 to 0.083 ppb. The low levels of these compounds in the samples collected are not a threat to public health.

The results of the chemical analysis are based on sampling conducted on December 15, 1983. More detailed sampling is recommended at this site. The heavy black oil leaching from the landfill into the northern drainage ditches is of unknown content. Past FIT sampling has detected the presence of PCB's and other priority pollutants. This oil may impact the water quality of the Passaic River. A past history of illegal dumping, the presence of numerous 55-gallon drums within the site, and the oil leachate would predicate the need for further sampling and investigation of potential routes of contaminant migration off site.

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2. Soil from the Ottilio & Sons Landfill contained concentrations of TCDF less than 1 ppb.
3. Heavy black oil is leaching from the landfill and collecting in drainage ditches on the northern border of the site.